We claim:

1. A radiation curable hot melt composition that can be cured by radiation only to a non-tacky coating, said composition comprising:
   a) 20 to 100 wt.% of a radiation curable resin or a mixture of radiation curable resins having a viscosity in the range from 15 to 10,000 mPas in the temperature range from 40 to 150°C,
   b) 0 to 50 wt.% of a hydroxyfunctional resin or oligomer or a mixture of hydroxyfunctional resins or oligomers,
   c) 0 to 10 wt.% of a photoinitiator,
   d) 0 to 50 wt.% of fillers and/or additives, and
   e) 0 to 40 wt.% of pigment,

   wherein the total amount of components a) to e) adds up to 100 wt.%.

2. The radiation curable hot melt composition of claim 1, wherein the radiation curable resin or the mixture of radiation curable resins has a T_g below 0°C.

3. The radiation curable hot melt composition of claim 1, wherein the composition is a coating composition comprising a radiation curable resin or a mixture of radiation curable resins with a viscosity in the range from 15 to 4,000 mPas in the temperature range from 40 to 150°C.

4. The radiation curable hot melt composition of claim 1, wherein the composition is a putty composition comprising a radiation curable resin or a mixture of radiation curable resins with a viscosity in the range from 3,000 to 10,000 mPas in the temperature range from 40 to 150°C.

5. The radiation curable hot melt composition according to claim 1, wherein the composition comprises a polyesteracrylate resin.

SUB A1 > 6. A process for coating a substrate to provide a non tacky protective coating or film thereon, said process comprising the steps of:

i) providing a radiation curable hot melt composition comprising a) 20 to 100 wt.% of a radiation curable resin or a mixture of radiation curable resins having a viscosity in the range from 15 to 10,000 mPas in the temperature range from 40 to 150°C, b) 0 to 50 wt.% of a hydroxyfunctional resin or oligomer or a mixture of hydroxyfunctional resins or oligomers, c) 0 to 10 wt.% of a photoinitiator, d) 0 to 50 wt.% of fillers and/or additives, and e) 0 to 40 wt.% of pigment, wherein the total amount of components a) to e) adds up to 100 wt.%,

ii) heating said hot melt composition to a temperature in the range from 40 to 150°C,

iii) applying said hot melt composition to the substrate in the form of a coating or thin film, and

iv) curing said hot melt by exposing the coated substrate to electromagnetic radiation having a wavelength $\lambda \leq 500$ nm.

7. The process according to claim 6, wherein the substrate is a heat-sensitive substrate.

8. The process according to claim 7, wherein the substrate contains cellulose and/or plastic and the hot melt composition is heated to a temperature in the range from 40 to 100°C.

9. The process according to claim 6, wherein the hot melt composition comprises a resin or a mixture of resins with a T_g below 0°C

10. The process according to claim 6, wherein the hot melt composition comprises a polyesteracrylate resin.

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